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ABSTRACT

The effect of interpersonal problem-solving skills training on the verbal and behavioral competence in the social problem-solving of preschoolers was assessed. An intervention was designed to help preschoolers set goals, generate alternatives, and evaluate outcomes in problematic social situations. For the verbal component of social problem-solving, results indicated that performance of experimental subjects uniformly improved from pretesting to posttesting, whereas that of two out of three control subjects deteriorated. For the behavioral component of social problem-solving, results indicated almost no difference between experimental and control subjects. (PCB)

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ENHANCING INTERPERSONAL PROBLEM-SOLVING SKILLS IN PRESCHOOLERS

by

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ENHANCING INTERPERSONAL PROBLEM-SOLVING SKILLS IN PRESCHOOLERS

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Enhancing Interpersonal Problem-Solving Skills in Preschoolers

INTRODUCTION

While it has never been enough to know what to think, some people continue to believe facts are necessary and sufficient elements in formal education. Consequently, they conclude that most public and private institutions of education reward those students who provide "the right answers." There is not yet much concern about how they obtained them.

The international information and communication explosion within the later half of this century serves to emphasize that facts are not enough. Children need to learn how to develop problem solving strategies; we need individuals who can problem-solve creatively: They will know how to think.

Unfortunately, the three social institutions that help perpetuate our culture -- the church, the public school, and the family -- have neither kept pace with the economic and political institutions nor the information-communications process in our international community. And since private citizens in this community own coroporations, they seek employees who have multiple skills, a range of experiences and knowledge to solve problems creatively. Learning how to think can be nurtured in children beginning with preschoolers. Research tends to support this claim.

A research team studied 20 preschoolers and 18 5th and 6th graders asking each to solve a problem that allowed multiple

solutions. They were either read a story that included an analogous problem and its solution or were presented the problem without a story. The results showed that when the mapping between the relations involved in the corresponding instruments were perceptually and functionally similiar, even preschoolers were able to use the analogy to derive a solution to the transfer problem (Holyoak, Junn, Billman, Dorrit, 1984).

In the proposed study the focus will be on three Interpersonal Problem-Solving Skills: (s) Identifying Goals; (2) Generating Alternatives; and (3) Evaluating Consequences. Observable, qualtifiable behavior will indicate the presence or absence of these skills in preschoolers as they "play."

STATEMENT OF THE PROBLEM

What effect will Interpersonal Problem-Solving Skills Training have upon Identifying Goals, Generating Alternatives, and Evaluating Consequences in four year old preschool males?

Hypotheses

The number of relevant solutions defined in terms of Identifying Goals, Generating Alternatives, and Evaluating Consequences will be higher among preschoolers exposed to interpersonal problem-solving curriculum than children who are not exposed to it. In particular, it is predicted that the ratio of relevant solutions over total solutions will be higher for preschoolers exposed to IPSS training than for those not so exposed.

Delimitations of the Problem

This study is delimited to four-year-old male preschoolers of above-average IQ and social backgrounds.

Limitations

There are three noteworthy limitations. First, the investigator who delivered the intervention also administered pretest and posttest assessments of social problem-solving skills. The possibility of investigator bias must be conceded at the outset, although every effort was made to follow the scoring manual strictly. Second, the use of a preschooler confederate to evaluate behavioral dimensions of social problem solving was not administratively feasible within the setting in which this

research was conducted. And third, independent teacher assessment of Control and Experimental subjects was conducted only at the conclusion of intervention and not before. Therefore, pre-to-post teacher assessment comparisons were not possible.

Definitions

Behavioral Interpersonal Problem-Solving Training is a program to teach social problem-solving processes which include goal identification, generating alternatives, and evaluating consequences.

REVIEW OF RELATED LITERATURE

At the core of any thinking operation is a problem -- whether it's to discern the meaning of a poem, design a building, or effect a specific change within a social relationship.

By the age of three, a young child's social world is expanding to include a complicated network of interpersonal interactions requiring the child to interact with adults and other children of varied ages (Maccoby, 1980). With an increased frequency and complexity of social interactions, the potential for interpersonal problems increases (Stollak, Scholom, Kallam, & Saturansky, 1973). The development and maintenance of successful interpersonal relationships is influenced by the acquisition and utilization of problem-solving skills (Anderson & Messick, 1974; D'Zurrilla & Goldfried, 1971). Research findings across the age span confirm the positive relationship between problem-solving skills and interpersonal success (Elardo & Caldwell, 1979; Gottlieb & Asarnow, 1979; Larcen, Spivack, & Shure, 1972; Platt, Spivack, Altman &Pheizer, 1974). A summary of the literature suggests: (a) children need to know the skills which facilitate interpersonal problem-solving and (b) children need to practice and experience successful problem-solving. The importance of acquiring and practicing these skills at an early age is invaluable in developing a success cycle that is related to positive outcomes such as peer popularity, positive perception by teachers and parents, and high personal self-esteem (Gesten, Flores de Apodaca, Rains, Weissberg, & Cowen, 1978).

Children who do not experience success in these encounters

set in motion a cycle of failure in dealing with interpersonal problems (Maccoby, 1980; Seligman, 1975). The outcome of repeated failure is a child who participates in fewer and fewer positive interactions which result in negative consequences such as social isolation, lack of achievement, school failure, and mental health problems (Cowen, Pederson, Babijian, Izzo, & Trost, 1973; Gronland & Anderson, 1963; Hartup, 1970; Strain, Shores & Kerr, 1976; Ullman, 1957). Since 50% of human cogitive development is concluded by age four, early childhood environments are vital determinants of adult higher intellectual potential (Bloom, 1964; Hunt, 1961).

With the exception of research conducted at the Hahnemann Medical College (Shure & Spivack, 1980; Spivack, Platt, & Shure, 1976; Spivak & Shure, 1974; Sharp, 1981), there has been surprisingly little systematic effort to develop and evaluate programs for preschool children in which the focus is to teach interpersonal problem-solving skills. The work of the Shure & Spivack team has demonstrated that: (a) lower SES preschool children can be taught to generate alternative solutions to interpersonal problems and (b) teachers report that preschoolers who are in an interpersonal problem-solving program are better adjusted than those who are not involved. Sharp's (1981) replication of the Shure and Spivack program confirmed that preschoolers can be taught to generate alternatives to problem social situations. However, they failed to find support for the relationship between interpersonal problem-solving skills and adjustment. Although the results of the Shure and Spivack work

are encouraging, several programmatic and methodological issues are left unanswered.

First, the ability to think about alternative solutions to problems and their possible consequences does not assure that the solutions will be reached, i.e., the child will act on these generated alternatives. The importance of a behavioral component to any problem-solving training program has been clearly documented (Harrell & Guerney, 1976; Jacobson, 1978; Ridley, Avery, Harrell, Leslie & Dent, 1981). In addition, an empathic mode of communication during the interpersonal problem-solving process is a component which facilitates movement toward successful problem solving (Avery, Ridley, Leslie & Milholland, 1980; Guerney, 1977). Thus a more comprehensive interpersonal problem-solving model should include all three components: The cognitive problem solving, the behavioral problem solving, and an empathic communication mode.

Second, a behavioral measure for assessing interpersonal problem solving is necessary. The Shure and Spivack Preschool Interpersonal Problem Solving test (Shure & Spivack, 1974), measures the ability of a young child to think of alternative solutions to a problem in an experimental setting. Although it is important to make this assessment, a child's actual behavior when confronted with an interpersonal problem is unknown. The training problem is not fully evaluated without an assessment of the subject's behavior. Moreover, a behavioral measure is perhaps even more critical when working with young children since many four-and-five-year-old children have not fully developed the verbal skills to handle interpersonal problem situations,

although they may have developed behavioral strategies for acting on these situations.

Third, the factor(s) in the Shure and Spivack work which produced the favorable results are unfocused. The training program was implemented by the regular preschool teachers during the daily traininng phase of the program, reinforced by the preschool teacher throughout the remainder of the school day. Perhaps the teacher's involvement in the program and continued interaction with the child served to confound treatment effects (Sharp, 1981).

Fourth, the generalizability of the Shure and Spivack findings to other than lower socioenomic status black children is questionable. Given the desirability of being able to generalize to a wider range of children, any problem-solving program will need to be tested with several target populations before claims of program validity can be made.

The purpose of this study is to evaluate an interpersonal problem-solving program constructed for preschoolers. It is hypothesized that the treatment group, relative to control group, will improve from pretest to posttest on verbal and behavioral components of social problem-solving skills.

METHODS

Sample

Six male subjects were randomly selected from the available pool of 11 children enrolled in a private university-based preschool. All were above average IQ, and all came from middle-class families. While all the children in the study were born in this country, 3 of the 6 sets of parents were born in China, Pakistan and Afganistan, the remaining being born in the U.S.A.

Instruments

The Behavioral Preschool Interpersonal Problem Solving Test (BPIPS, see Appendix A) was designed by Ridley & Vaughn (1982) to assess the ability of subjects to perform three related social problem-solving task: 1) Setting Goals, 2) Generating Alternatives, and 3) Evaluating Outcomes. The BPIPS is based, in part, upon the "Story Alternatives Test" developed by Caldwell & Elardo (1979) to estimate the number of alternatives generated by children to certain problem-solving situations. The Preschool Interpersonal Problem-Solving test (PIPS) is one variation developed by Shure & Spivack (1975). The Ridley & Vaughn (1982) version of the problem solving test was expanded to include not only generating alternatives but also identifying goals and evaluating outcomes.

In order to make an initial assessment of the reliability of the BPIPS, thirty-two preschool children comparable in age to the children in this study were tested twice on BPIPS, with a 10-week

interval between testings (Ridley and Vaughn, 1982). During the ten weeks between testing the children were involved in an ongoing preschool program which did not include any specific training in problem-solving skills. The test-retest correlation on BPIPS was .65. Although BPIPS and PIPS were designed to measure different dimensions of interpersonal problem solving, there should be a relationship between the two measures. It was reasoned that if the two interpersonal problem-solving measures were related, some support would be suggested for the validity of BPIPS. Using the entire sample from the Ridley and Vaughn study (1982), PIPS and BPIPS were found to be significantly correlated at pretest (r= .62), posttest (r= .70), and follow-up (r= .81).

The investigator chose the Behavioral Interpersonal Problem Solving test (BPIPS)(Ridley & Vaughn, 1982) to assess social problem-solvin skill because it maps more comprehensively than the PIPS or Caldwell & Elardo measures the major components of the social problem-solving process -- goal setting, generating alternatives, and evaluating outcomes. Two changes were necessary, however, in administering the BPIPS to subjects in this sample.

First, it was not administratively feasible to use a preschooler confederate to stage social problem-solving situations as recommended in the manual. Instead, the investigator modeled the stories using manipulable felt characters on felt background following the recommended text and supporting procedures given in the manual. In other words, the specially created felt characters and coordinated backgrounds provided the bases for modeling scenarios that otherwise would

have involved a confederate preschooler.

Second, select changes were made in problem-solving scenarios to accomodate the setting and developmental age of children in the current study. In the first story, the phrases "sitting next to you in class" and "beating you up after school" were changed to read "sitting next to you in circle at lesson time" and "hitting you when you sit down in circle," respectively. In the second story, the phrase "Your best friend is walking through the hall" was changed to "Your best friend is playing in the school yard." In the third story, "playing ball on the playground with your friends" was changed to "playing ball with your friends in the gym," "Another boy says he wants the baseball bat" to "Another boy says he wants the ball" and the phrase "on the playground" to "in our school yard." Finally, "some of your friends" was substituted throughout for "some of your classmates."

The Vaughn & Ridley Obervational System (1983, abbreviated VROS), based on other rating systems (Caldwell & Honig, 1970; Furman & Masters, 1978; Gottman, Gonso & Rusmussen, 1975; Hops, 1973), was adapted to code behaviors of subjects toward peers and teachers across a range of categories. Each subject's social behavior is observed and recorded on each of three dimensions: Positive/Negative, Verbal/Nonverbal, and Peer Directed/Adult Directed. All behavior is thus codable into one of eight categories: Positive Verbal Peer; Positive Verbal Adult; Positive Nonverbal Peer; Positive Nonverbal Adult; Negative Verbal Peer; Negative Verbal Adult; Negative Nonverbal Peer; and Nega-

tive Nonverbal Adult. Two teachers independently rated each of the six subjects using VROS forms included in Appendix B. Altogether, then, the BPIPS in its modified version was used to estimate the verbal component and the VROS was used to estimate the behavioral component.

Procedure

In estimating the verbal or cognitive component of social problem solving, the BPIPS was administered by the investigator to all subjects one week prior to and one week subsequent to the three-week term of intervention for for Experimental subjects. In estimating the behavioral component of social problem solving, the VROS was administered by two teachers who independently rated all subjects two weeks following intervention.

For three weeks following pretesting on the BPIPS, each Experimental subject was exposed to nine stories written by the investigator, each providing opportunities for Identifying Goals, Generating Altenatives, and Evaluating Outcomes. A different story was read three times each week for 3 weeks, each session requiring 10 minutes per child, given the short attention span of the preschooler.

Each story was supported by a cast of felt figures and coordinated backgrounds that could be manipulated in relation to each event in the story line. Each story involved an age-appropriate social problem told in relation to the lead character. The goal or outcome, from the lead character's perspective, was then shared, following which the investigator role played at least three alternatives to resolve the problem

and achieve the goal. Each alternative was presented in an animated way, manipulating felt figures and coordinated backgrounds, changing story teller mood and voice. For each alternative presented, the investigator would talk through what would likely happen (or fail to happen) if that alternative were selected. Following each round of goal setting, generating alternatives, and evaluating consequences illustrated through animated role play by the investigator, the child was then asked to tell the story using the method illustrated and role play modeled by the investigator. At no point was the child's story line prompted, interrupted, or changed by the investigator. This procedure was replicated for each story introduced in each of 9 sessions for Experimental subjects. Control subjects, throughout the three-week term of intervention for Experimental subjects, were involved only in regular classroom activities.

RESULTS AND DISCUSSION

It was hypothesized that the treatment group, relative to the control group, would improve from pretest to posttest in verbal and behavioral components of social problem-solving. Table 1 presents data in relation to the verbal component and Table 2 data in relation to the behavioral component of the hypothesis.

Table 1 data on the verbal component indicate that each member of the Experimental group improved from pretest to posttest and that two of three members of the Control group actually decreased from Pretest to Posttest. Moreover, the lowest score in the Experimental group is higher than the highest score in the Control group. Not surprisingly, then, the mean of Eperimentals from Pre to Post is +.143 and the mean decrease for Controls is -.045. In other words, Experimentals at Posttesting had increased .143/.762 or 18.76% over Pretesting and Controls at Posttesting had decreased .045/.634 or 7.10% below Pretesting, the absolute magnitude of difference between Experimentals and Controls thus being 25.86%. Because of the small n's in each group, it was not possible to evaluate the magnitude of this difference statistically. However, qualitative examination of test protocols at Pretesting and Posttesting revealed some noteworthy patterns. First, the children in both groups had greatest difficulty at Pretesting and Posttesting on evaluating outcomes, the most mature and demanding component of social problem solving. Second, the Experimental subjects were clearly superior to Controls at Posttesting on setting goals.

Table 1

Percent Relevant Responses on the BPIPS Measure

Control and Experimental Subjects

Group	Percent Relevant Responses*		
	Pre	Post	Post-Pre**
CONTROL			
001	.555	.576	.021
002	.607	.578	-.029
003	.739	.555	-.184
Mean	.634	.569	-.045
EXPERIMENTAL			
004	.840	1.00	.160
005	.727	.950	.223
006	.720	.765	.045
Mean	.762	.905	.143

* The number of responses scored in the BPIS Manual as relevant to setting goals, generating alternatives, and evaluating outcomes over the total number of responses -- relevant and irrelevant.

** Posttest minus Pretest Score

Table 2 data on the behavioral component are taken from Posttreatment teacher ratings on the VROS. Initially, the intent was to separately present and analyze Positive and Negative verbal and Nonverbal ratings towards teacher and peer. In analyzing the data, however, Positive and Negative Verbal and Nonverbal ratings towards teachers were nearly identical to those toward peers. A decision was made, therefore, to combine teacher and peer ratings into a single category. The results appear in Table 2 which presents summated ratings of both teachers in each of 8 ratings corresponding to the 6 subjects. Forty-eight ratings were made by each teacher, the overalll rate of agreement between teachers being 92%, i,e., teachers disagreed on only 4 of the 48 possible ratings. Based upon these ratings, Experimental and Control Subjects were not distinguishable: The overall percent positive for Experimentals was 62.82 and for Controls 64.45. These data suggest, therefore, that no significant differences exist between Experimental and Control subjects on the behavioral measure of social problem-solving skill.

Table 2

Posttreatment Teacher Ratings on the

Vaughn & Ridley Observation System (VROS)*

	Positive		Negative		
Group	V	NV	V	NV	Overall % Positive
CONTROL					
001	4	3	4	4	46.67
002	4	4	0	0	100.00
003	4	3	4	4	46.67
Mean	4.00	3.33	2.67	2.67	64.45
EXPERIMENTALS					
004	3	2	4	4	38.46
005	4	3	3	4	50.00
006	4	4	0	0	100.00
Mean	3.67	3.00	2.33	2.67	62.82

* Tabled entries are based upon the summatted ratings of two teachers who independently rated each child, V representing Verbal and NV Nonverbal behavioral codes defined in the VROS Manual.

The data in Tables 1 and 2 confirm half of the main hypothesis (verbal) and disconfirm the other half (behavioral). Under measures and procedures used in this study, the intervention had a salutary impact upon verbal or cognitive components of social problem-solving and no effect whatsoever on behavioral components of social problem solving. Of the several methodological and substantive explanations that could be offered to account for this paradoxical finding, five appear to be of special interest and relevance.

First, one could argue that males are generally less apt in social problem solving than females. Since males only were included in the sample, this could explain why verbal but not behavioral changes in social problem solving were found. As tempting as this possibility might be, Vaughn & Ridley (1983) found no difference between male and female subjects on the VROS, the behavioral index of social problem solving used in this study.

Second, one could argue that decentering -- the capacity to see events from another's perspective -- is necessary for effective social problem-solving. It is possible that the demands of social problem solving -- especially evaluating outcomes -- exceeded the cognitive capacity of preschoolers in this study. For this reason, then, one could argue that behavioral effects are short circuited by developmenmtal immaturities. This speculation also fails to accord with the results of Vaughn & Ridley (1983) who found that social problem-solving training increased positive behaviors toward teachers and

peers in a sample of 4 to 6 year olds.

Third, one could argue that the behavioral test is not sufficiently sensitive to cognitive or verbal changes in social problem solving. Although it is risky to compare subjects across tests in this small sample, it is striking that Control subject 002 and Experimental subject 006 with the highest behavioral ratings (Table 2) were among the lowest within their respective groups on verbal ratings (Table 1). In general, casewise inspection of values in Tables 1 and 2 reveal no systematic relationships between behavioral and cognitive measures. Interestingly, the VROS has been validated in relation to a special program of social problem solving but <u>not</u> in relation to the BPIPS or PIPS. It is possible, therefore, that verbal and behavioral changes are not in exact correspondence or that the correspondence occurs only under special circumstances, which introduces the next point.

Fourth, the absence of verbal and behavioral correspondence may be related to the term of intervention. In the literature, the usual term of intervention ranges from 10 weeks (Vaughn & Ridley, 1984) to 12 weeks (Shure & Spivack, 1980). It may well be, then, that the three-week term of intervention used in this study was simply too brief to produce verbal <u>and</u> behavioral effects. Under the limitations of this study, then, it may be that short-term interventions produce cognitive effects which are precursorily related to behavioral effects which are not produced. One could speculate, then, that had Vaughn & Ridley (1983, 1984) obtained verbal as well as behavioral measures to evaluate the impact of social problem-solving programs that

lasted 10 weeks, they would have found significant change on both dimensions. This possibility, the, is a prime candidate for future research. The deeper implication is that changes in social problem solving may be developmental in nature, cognitive changes preceding and perhaps conditioning behavioral changes.

And fifth, one could argue thatthe lack of correspondence between verbal and behavioral measures is strictly methodological: The investigator implemented the treatment and conducted verbal assessments on Experimental and Control Subjects. There remains, then, the possibility of investigator bias which could explain why differences were found on the investigator-administered verbal measure but not on the teacher-administered behavioral measure. At the extreme, reported differences could be illusory, although the investigator attempted without exception to follow detailed instructions provided in the manual for coding child responses. This criticism cannot be dismissed and must be addressed in future research which utilizes ratings of both verbal and behavioral measures by persons not formally connected to the subjects.

While the conclusions of this study are sharply limited by sample size and methods used, results nonetheless suggest that future research on social problem solving could profit from: (a) Systematic variation of the term of intervention; (b) Systematic inclusion of more than one behavioral measure; (c) Systematic variation of the age of subjects; and (d) Systematic inclusion of independent verbal and behavioral ratings.

SUMMARY

An intervention was designed to help preschoolers set goals, generate alternatives, and evaluate outcomes in problematic social situations. As such, the intervention plan was decidedly verbal or cognitive in nature. The purpose of this study was to evaluate the extent to which preschoolers assigned to this program exhibited higher verbal and behavioral competence in social problem solving than preschoolers not assigned to it.

Six male subjects from an available male pool of eleven were selected for this study. These subjects, all four years old, were randomly assigned to Experimental and Control conditions, three in each group. The Behavioral Preschool Interpersonal Problem Solving Inventory (BPIPS) developed by Ridley & Vaughn (1982) was used to measure the verbal component of social problem solving, and the Vaughn & Riddley Observation System (1983) was used to measure the behavioral component. The BPIPS was administered before and after treatment by the investigator, and the VROS was administered after treatment by two teachers who independently rated each subject.

For a period of three weeks, three 10-minute individual lessons three times per week, Experimental subjects were exposed to age-appropriate stories featuring social problems. The investigator modeled how to set goals, generate alternatives, and evaluate outcomes from the perspective of the main character. Following each presentation, each Experimental subject was required to retell the story using the modeled procedure. Control subjects were involved only with regular preschool

activities throughout the three-week term of intervention for Experimental subjects.

For the verbal or cognitive component of social problem solving, results indicated that Experimental subjects uniformly improved from Pretesting to Posttesting. In contrast, the performance of 2 of 3 Control subjects deteriorated on the cognitive component from Pretesting to Postesting. The Pretest-to-Posttest gain of Experimentals was about 25.9% higher than that of Controls. For the behavioral component of social problem solving, results indicated practically no difference between Experimentals and Controls. Of five possible factors that may have accounted for this pattern of paradoxical findings, positive change for verbal and absence of change for behavioral, three warrant further investigation: (a) possible insensitivity of the behavioral measure; (b) brevity of the term of intervention; and (c) possible bias of the investigator who administered the verbal but not the behavioral measure. While the conclusions of this study are sharply limited by sample size and methods used, four areas of future inquiry were identified.

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Appendix A

Behavioral Preschool Interpersonal Problem-Solving Test

PROBLEM SOLVING TEST: RECORD FORM

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Student's Name:_____ Examiner:_____

Date:_____ Pre ☐ Post ☐

Teacher:_____

Grade:_____ Follow-Up ☐

1. The boy (girl) sitting next to you in class leans over and tells you that he is going to beat you up after school.

   A. WHAT COULD YOU DO?

   B. YOU SAID YOU COULD.....(list the solutions to the problem the student stated in "A"). THESE ARE ALL THE THINGS YOU SAID SOMEONE IN THIS SITUATION COULD DO - WHICH OF THOSE DO YOU THINK YOU WOULD CHOOSE IF YOU WERE IN THAT SITUATION?

   C. WHAT MADE YOU DECIDE TO.....(selected solutions of student) RATHER THAN (list other solutions suggested by student).

   D. IF YOU DID.....(selected solution of student), WHAT DO YOU THINK WOULD HAPPEN NEXT?

2. Your best friend is walking through the hall and another kid pushes him/her. The two kids begin fighting. You see the fight.

A. WHAT COULD YOU DO?

B. YOU SAID YOU COULD.....(list the solutions to the problem the student stated in "A"). THESE ARE ALL THE THINGS YOU SAID SOMEONE IN THIS SITUATION COULD DO - WHICH OF THOSE DO YOU THINK YOU WOULD CHOOSE IF YOU WERE IN THAT SITUATION?

C. WHAT MADE YOU DECIDE TO.....(selected solution of student) RATHER THAN (list other solutions suggested by student).

D. IF YOU DID.....(selected solution of student), WHAT DO YOU THINK WOULD HAPPEN NEXT?

3. You are playing ball on the playground with your friends. Another boy/girl comes up to you and says s/he wants the ball and starts to grab it from you.

A. WHAT COULD YOU DO?

B. YOU SAID YOU COULD.....(list the solutions to the problem the student stated in "A"). THESE ARE ALL THE THINGS YOU SAID SOMEONE IN THIS SITUATION COULD DO- WHICH OF THOSE DO YOU THINK YOU WOULD CHOOSE IF YOU WERE IN THAT SITUATION?

C. WHAT MADE YOU DECIDE TO.....(selected solution of student) RATHER THAN (list other solutions suggested by student).

D. IF YOU DID.....(selected solution of student), WHAT DO YOU THINK WOULD HAPPEN NEXT?

4. You are standing by yourself on the playground and would like to join in a game being played by several of your classmates.

   A. WHAT COULD YOU DO?

   B. YOU SAID YOU COULD.....(list the solutions to the problem the student stated in "A"). THESE ARE ALL THE THINGS YOU SAID SOMEONE IN THIS SITUATION COULD DO - WHICH OF THOSE DO YOU THINK YOU WOULD CHOOSE IF YOU WERE IN THAT SITUATION?

   C. WHAT MADE YOU DECIDE TO.....(selected solution of student) RATHER THAN (list other solutions suggested by student).

   D. IF YOU DID.....(selected solution of student), WHAT DO YOU THINK WOULD HAPPEN NEXT?

Appendix B

Vaughn & Ridley Observation Rating System

Definitions of the Terms Used
in the
Vaughn and Ridley Observational System

Rater: Teacher rating osberved verbal and nonverbal behavior of children in the research project.

Name: Name of child in research project

Positive verbal peer(Pos. ver. P.) Positive verbalization from the subject(child) directed to a child; e.g., praise or warm greeting.

Positive verbal adult(Pos. ver. A.) Positive verbalization from the subject(child) directed to an adult; e.g., requesting help, praise, questioning.

Positive nonverbal peer(Pos. Nonv. P.) Positive behavior from the subject(child) directed to another child; e.g.,offering help, smiling, offering guidance.

Positive nonverbal adult(Pos. Nonv. A.) Positive behavior from the subject(child) directed to an adult; e.g. following directions, helping, sharing.

Negative verbal peer(Neg. ver. P.) Negative verbal behavior from the subject(child) directed to another child; e.g., name calling or teasing.

Negative verbal adult(Neg. ver. A.) Negative verbal behavior from subject(child) directed to an adult; e.g., verbal defiance, name calling.

Definitions of the Terms Used
in the
Vaughn and Redley Observational System

(continued)

Negative nonverbal peer(Neg. Nonv. P.) Negative behavior from the subject(child) directed to another child; e.g., physical attack, grabbing object from child, interfering with another child's activities.

Negative nonverbal adult(Neg. Nonv. A.) Negative behavior from the subject(child) directed to an adult; e.g., not following directions, persistence in touching adult after the adult indicated that it is no longer desirable.

Vaughn and Ridley
Observational System

Rater_____ Name_____

Pos. ver. P.	Pos. ver. A.	Pos. Nonv. P.	Pos. nonv. A.	Neg. ver. P.	Neg. ver. A.	Neg. Nonv. P	Neg. nonv. A.
36							
37							38

Appendix C

T.N.T.'s Social Problem-Solving Stories

I. To Build a Road

Tommie Nell Taylor

Yani and Omar were playing with the large red blocks at nursery school one day. They decided to build a winding, wide road. They made it so long, part of it ran into the doorway to the block room. Other children bumped into it by accident, destroying the same part every time. Yani and Omar did not notice this because they were too busy shouting at the other boys and girls to stop breaking down their red block road. The teachers heard the shouting. A teacher came to find out what was the problem and to quiet the one shouting. The children told the teacher what had happened, about the others who had accidentally knocked down the red block road. They apologized and went off to play elsewhere.

Yani and Omar built the road again. This time, however, they closed the door. But when they did that, it kept others from the room and seeing the road. So when the door was opened, the red road was knocked down again.

Yani noticed that the same part of the road was down as before. Omar said that they just couldn't build a road that long, because the others kept kicking it down. But, Omar noticed, "Just one part is torn down every time." So they took it out. They found that if they left out that part of the red road, the road became too sharp to race their cars.

By moving that section of the road away from the doorway, they had to move the other parts of the road so the cars could ride quickly and smoothly over the winding course.

"Let's see if anyone breaks part of it now," Omar said.

"They won't because we moved it out of the doorway," said Yani.

And, nobody did.

II. The Red Tower

Tommie Nell Taylor

Once upon a time there were three little boys named Yani, Patrick, and Qui. Patrick and Qui began building a red tower with legos. Yani came over to the table to join Patrick and Qui. But he did not ask to play with them. He began to make a building that looked as if it might be a tower. It was gray and wider than the red tower.

"What are you building?" asked Qui.

"A dish," replied Yani.

"A what?" asked Qui.

Yani enthusiastically said, "A satelite dish. It helps our cable television receive pictures from a space satelite!"

Looking at the red tower, Yani wondered, "What does this do?"

Patrick explained that "It's a control tower for airplanes and helicopters. One man watches the radar screen for planes and copters flying in the air. One man tells the pilots when they can land their planes on the field and when they can take off."

"I want to be the man that watches the radar screen for planes and copters," Qui sings out.

"I want to be the man who tells the pilot to take off! Oh, that's the one I wanted to be," Patrick said sadly.

Yani made a suggestion: "Let's take turns. It will be Patrick's turn after Qui, then my turn. That way we can each have a turn telling the pilots when to land."

Patrick sounded unconvinced. "When will it be my turn?"

"Qui, you, then me," Yani replied.

Qui asked, "How many planes or helicopters can you count?"

"I can count up to ten," said Yani.

"Me, too," said Qui.

"I can count to ten, too," said Patrick, "but that might take too long."

"Yea, it might, but let's try it," Yani proposed. All three boys played the game for a while. The time did seem long and a bit boring, so Patrick suggested,

"Maybe we should help only five pilots take off at a time."

All the boys agreed.

After a while, Yani asked, "Who wants to be first to play with my satelite dish?"

"Me," both Qui and Patrick said at the same time.

"Let's take turns," Yani said.

III. Yani, Rosie, and Qui

Tommie Nell Taylor

Once upon a time there were three little children. Rosie was a little girl with skin as brown as chocolate, eyes as warm and shiny as hot coco. Her hair moved about her head like a soft, puffy black cloud. Yani was a little boy. And Qui was a little boy.

One sunny day Yani and Rosie were playing cars and bridges in the block room at their nursery school.

"See how my red car rolls over this long, long bridge," said Rosie to Yani.

"But I bet you can't make your car go as fast as my blue car," challenged Yani.

Rosie quipped, "Let's have a race and see who wins. When I count to three, let's start, O.K.?"

While Rosie and Yani were playing, Qui entered the room. He wanted to play, but he was afraid to. He did not know Rosie and Qui since this was his first day in nursery school. He was afraid they would not let him play with them. The longer he watched, the more he wanted to play. Finally he rushed over and took Rosie's car and ran away. Rosie ran after him calling,

"Give my red car back...give it back."

The teacher heard them and saw them struggling over the redcar. After explaining to Qui that he could not just take other children's toys or belongings without their permission, he had Qui to return the red car to Rosie. Rosie and Yani continued

to play cars. Qui returned to his place in the doorway of the block room. He walked very slowly over where Rosie and Yani were playing. He wanted to play.

Rosie wlas still angry with him for taking her car and thought that he wanted to take it again. So she grabbed it up and held it to her chest in her fist.

Yani said, "You can't have this blue car."

"I'll bring my cars from home and I won't let you play with them either," screamed Qui, kicking at the long, long block bridge and toppling it over. I have blocks, too, at home," he continued to scream.

Rosie said it was against the rules to bring toys from home. Besides, she said,

"There are some white cars, blue cars, and red cars in the toy chest. I'll show you where they are."

Rosie took Qui to the toy chest. Qui chose a white car. Qui returned with Rosie. Yani wanted to race cars to see who would win. Qui's white car won the race. Rosie asked Qui,

"Can I have a turn with that white car. It z-o-o-oms!"

Yani said I have an idea. Let's all take turns racing the red, white, and blue cars.

And they did.

IV. The Frog and Three Flies

Tommie Nell Taylor

Once there lived a frog and three flies. They all lived in a beautiful lilly pond. The three flies were resting on a lilly pad a safe distance out ofthe reach of the frog's tongue.

The flies knew that they were among the favorite foods of the frog. They were trying to get past the frog without being eaten. The first fly thought he would be able to fly so quickly pass the frog that the tongue of the frog would still be in his mouth when he flew by.

The little fly's wings went "buzip." And the frog's tongue went "slip." He ate the first little fly.

The second little fly thought that he could fly and skate on the surface of the pond right past the frog. Unlike himself the frog was too big and heavy to skate on the pond.

The second little fly skated, "bus-s-s-sh, bus-s-s-sh." And the frog leaped, "splash." His tongue went "slis-s-sh, slis-s-sh." He ate the second little fly.

Now the third little fly saw what happened to the first and second little flies. She remembered that the frog had a long, long sticky tongue, "slip, slis-s-s-sh." She remembered thatthe frog leaped, "splash," into the water and swam to it. But he could not fly. He did not have wings. So she fixed her eyes on a tree on shore high above the frog, pad, and pond. She wondered if she could fly that high. So as she flew she thought,

"I can fly, I can fly high, I can fly higher."

She fixed her eyes on the tree, and it got bigger, then the branches, then the leaves, then she rested on a leaf. It was far above the pond, the lilly pad, and the "slip" and slis-s-s-sh" of frog's tongue.

V. Green Eyes

Tommie Nell Taylor

Once not so very long ago, a lonely fly sat on a sunny window seal. He felt different. His voice now was a sputter more often than a buzz. He couldn't fly as fast. The lady of the house almost caught him under her flyswatter last week.

He did not want to leavethe warmth of the window seal when the sun was so friendly. He slept more there than in his dark hiding plance on the ceiling in a corner.

One day he awoke to see a big, green creature with a pair of antennae and ten legs rippling past him on the outside of the window. His cousins, the dragon flies, had told him about caterpillars. Caterpillars have many legs and a pair of antennae; they never said anything about green eyes.

As he was mulling over all this, the flyswatter came down, almost slapping him beneath it. The lady of the house raised it again. He sputtered and flew frantically in circles to escape. He returned that evening exhausted. He fell asleep thinking of the waving legs of the green caterpillar and the green eyes. Days and days and days passed until one morning as he rested on the warm glass, the whole window appeared to brighted with the sunshine glowing.

In awe the fly saw two antennae and stared into two large, green eyes. He had not seen the caterpillar again. He had looked for him. He had eyes just like that of the new creature. And the fly knew that everyone in his family had green eyes.

Could it be that...he felt very tired as he drifted off to sleep for the last time, holding the green eyes in his dream.

VI. Persistence

Tommie Nell Taylor

Not so very long ago, a spider was trying to find a safe, pleasant place to spin her delicate, intricate web. She loved water. So first she tried to spin it beneath a waterfall. The spray and splash of the water tumbling over the rocks washed it away. The water beaded on the web sparkled as if crystal in the sunlight. The web looked as if it were a necklace, a spangle of jewels. But it was all washed away. It was a pleasant place, but not a safe one.

So she tried to spin her web high up in the mountains, but the winds combed through it catching on each strand, and the rain hung heavily upon it. It was torn and whisked off by the wind. It was not pleasant nor was it safe in the high mountains.

She tried to spin her web between two large stones. But a little boy, who enjoyed throwing stones, picked up one of them and threw it far away. As he picked up the stone, he stretched and ripped the silky web. Between the two large smooth stones was a pleasant place for it was stable. But it was not safe for the stones could easily be moved.

But as she thought about the places she had tried, she found herself before the entrance to a cave near a blue river. The sunlight reached like arms into the cave. Little spider found this to be pleasant. So she followed the sunbveams into the cave and spun er delicate, intricate web at the end of them. And until this day, nothing and no one destroyed her lacey web.

VII. The Weasle and Three Brown Rabbits

Tommie Nell Taylor

Far away in the South lived three brown rabbits and a red weasle. One of the Weasle's favorite meals was young tender rabbit.

He thought, "I think I shall visit the three little brown rabbits."

The first little brown rabbit lived on the edge of the forest. The weasle knew this. So he visited him first. He knocked on the door, "Thump, thump, thump...." The first little rabbit called out,

"Who is there?"

The weasle said, "It is I," in his nicest weasle voice.

"Why have you come to visit me?" asked the rabbit. "I have not forgotten thatyou enjoy rabbits for breakfast. I shall not let you in."

"Well," began Weasle, "I shall wait and weasle my way in."

Hearing this, the first little rabbit became frightened and ran out of his safe little house. Weasle ate him before he could scamper down rabbit's hole.

The first rabbit tasted so good, Weasle knocked on the second little rabbit's door. The second little rabbit asked,

"Why have you come to visit me? I have not forgotten that you enjoy rabbits for lunch. I shall not let you in."

Weasle replied, "Then, I shall weasle my way in." Then Weasle waited to see what the second little rabbit would do. He

waited and waited and waited before he climbed upon the roof and shimmied down the chimney right into the ashes in the fireplace. He jumped out and swallowed the second little rabbit.

Weasle thought that weasling rabbits is so easy that he'd visit another rabbit that lived near a meadow and a briar patch on the edge of the woods. The third little rabbit asked,

"Why have you come to visit me? I have not forgotten that you enjoy rabbits for breakfast, lunch, and dinner. Please come back at 6:00 tomorrow evening." Now, Rabbit knew that Weasle would be back at that time because it was Weasle's dinner time. And she had to prepare for his return. The next day Weasle was punctual. He knocked at the front door saying,

"Let me in little rabbit or I'll weasle my way in."

"Oh, you won't have to do that," replied little rabbit, "but first promise me you'll come to my back door and wipe your feet well."

"Alright," promised Weasle, pouting as he stomped to the back door. This gave little rabbit enough time to run out the front door into the meadow and down her rabbit hole.

Now Weasle liked to shimmey and slide and wiggle down holes, too. But Rabbit knew he would be too big for a rabbit's hole.

Weasle got stuck. And by the time he weasled free, Rabbit had jumped safely into the briar patch. Rabbit knew that Weasle would be so angry that he would follow her into the thorny briar patch. Rabbit knew Weasle could not escape if he did.

And he did not.

VIII. Discover

Tommie Nell Taylor

Four brown puppies wanted to play with a orange ball one day. The first little puppy scampered to catch and play with it first. Well, the second puppy wanted to play with the ball so badly that she just rushed right up to the first little puppy and took the ball away with her strong jaws and teeth.

Mother Cocker Spaniel saw what happened and made the second brown puppy return the ball to her brother. Then mother said,

"You have strong jaws and teeth, but you must not use them to take things that are not yours."

The third little puppy who wanted to play with the ball had a ballon with him. He said to the first brown puppy,

"Let me play with the ball while you gently play with my balloon." The first little puppy played roughly with the balloon while the third one played gently withthe ball. Very soon the balloon popped and the first puppy wanted the ball back. Mother gave the third puppy another balloon because he knew how to play with it gently and carefully.

The fourth little puppy had watched the other puppies playing. Then she walked over to the puppy with the orange ball and asked,

"What are you playing?" He said,

"Oh, I don't know. I'm just lifting and tossing the ball with my nose." The fourth brown puppy said,

"Show me how you do it!" and he did. Then the fourth brown

puppy said,

"Let's see if I can do it just like you," and she did. As she give it back to him she asked, "How many times can you lift and toss it without dropp it it?"

The first brown puppy began to count 1,2,3,..., all the way to 21. Then he gave it to the fourth puppy, and she lifted and tossed the ball 21 times also. Then the ball bounced and rolled onto the meadow where the second and third brown puppies were playing. Father Cocker Spaniel had tied a rope to the big tall, tall tree and the second brown puppy was using her strong teeth to hold the rope in order to swing back and forth under the cool shade tree. The third little puppy was gently tossing his balloon into the air with his head, nose, and paws. The fourth brown puppy called out,

"I will show you how," and he did.

They all took turns lifting and tossing the orange ball to one another.

IX. The Silver Bell

Tommie Nell Taylor

Once upon a time and far away and long, long ago there lived four baby elephants. One day one of the baby elephants received a silver bell for his birthday. As he was playing in the river, the bell would tinkle, tinkle, tinkle. Well, the other three baby elephants heard the bell before they saw the first little elephant wearing it around his neck. They wanted to discover what was making the sound. So they crept as softly as elephants can toward the river where their little friend was playing. In the tall shrub and grasses of the African savanah on the shore of the river they hide. When little elephant's friends saw him, they rushed from their hiding place, shouting loudly and excitedly lumbering toward their startled friend.

The first little elephant was so frightened that he ran away from noisy trumpeting. After running for a long time, little elephant was tired and wanted to rest. He told monkey what had happened. Monkey said,

"I can warn you, little elephant, by day when other elephants are near."

The tinkle of the bell could be heard from afar. But what about at night? What would little elephant do when the sun went down and moon came out. Monkey slept then. So he thanked monkey for his help and waited to talk with owl when the sun went down. Owl saw little elephant approaching and greeted him with,

"Who-o-o, who-o-o, who-o-o," teasing the little elephant.

Little elephant shouted impatiently, "My elephant friends, my elephant friends, my elephant friends, I told you!"

"Oh, I was just teasing," said the owl, "I am supposed to hoot...who-o-o."

"I am afraid and I need your help," said little elephant. He told owl what had happened. As owl listened and examined the silver bell, little elephant asked his friend,

"Since you are awake at night, could you warn me when the other elephants are coming so I can rest at night?"

Although monkey screeched by day and owl by night, elephant, monkey and owl grew tired. They went to spider and told him the story. Spider weaved a silver web over the clapper of the bell. She had to do this daily, for the web was torn away by the forest. And spider became tired, too.

Finally, little elephant's friends found him crying. He was exhausted. He thanked them all for their empathy and help. But he missed his other friends and parents. The monkey, owl, and spider encouraged little elephant to go to his friends to find out why they chased him. Monkey, owl, and spider agreed that little elephant must face his friends now.

He was still afraid, but he went to them. Little elephant was relieved to discover that his friends just wanted to play with his silver bell. They had never seen one before.

Little elephant and his friends laughed and laughed and laughed when they realized why little elephant had run away.